

AMENDMENTS TO THE CLAIMS

Please cancel claims 1 – 15.

Please add new claims 16 – 28 as follows.

Claim 16 (New). A process to manufacture vinyl acetate in a fluid-bed reactor containing feed stream inlets and gas outlets, in which mixtures comprising ethylene and acetic acid, and an oxygen-containing gas are contacted with a particulate fluid-bed catalyst, comprising:

- (a) introducing feed to the reactor in one inlet such that a feed stream containing primarily ethylene, acetic acid, or a mixture thereof and inert materials does not contain oxygen within flammability limits, and such that a feed stream primarily containing an oxygen-containing gas does not contain hydrocarbons within flammability limits;
- (b) controlling the amount of oxygen and inert material entering the reactor such that the outlet gas mixture is outside flammability limits; and
- (c) recovering vinyl acetate.

Claim 17(new). The process of claim 16 wherein the total amount of oxygen employed is higher than may be used without danger of flammability, if all feed streams were combined.

Claim 18 (New). The process of claim 16 wherein the reactor pressure ranges from about 50 to about 200 psig.

Claim 19 (New). The process of claim 16 wherein the reactor temperature ranges from about 100°C to about 250°C.

Claim 20 (New). The process of claim 16 wherein the oxygen-containing gas contains hydrocarbons comprising ethylene or acetic acid outside flammability limits.

Claim 21 (New). The process of claim 16 wherein 60% of the particulate fluid bed catalyst has a particle size diameter below 200 microns and no more than 40% of the particulate catalyst has a diameter less than 40 microns.

Claim 22 (New). The process of claim 16 wherein 50% of the particulate fluid bed catalyst has a particle size diameter below 100 microns and no more than 40% of the particulate catalyst has a diameter less than 40 microns.

Claim 23 (New). The process of claim 16 wherein the particulate catalyst is combined with particulate inert material.

Claim 24 (New). The process of claim 16 wherein the concentration of ethylene in the combined gaseous feeds entering the reactor is between 30 to 70 volume percent.

Claim 25 (New). The process of claim 24 wherein the concentration of acetic acid in the combined gaseous feeds entering the reactor is between 10 to 25 volume percent.

Claim 26 (New). The process of claim 25 wherein the concentration of oxygen in the combined gaseous feeds entering the reactor is between 8 to 25 volume percent.

Claim 27 (New). The process for manufacturing vinyl acetate in a fluid bed reactor in which an oxygen-containing gas, ethylene and acetic acid are reacted in the presence of a fluid bed catalyst material to produce vinyl acetate, wherein the improvement comprises feeding ethylene, acetic acid and inert material into said fluid bed reactor through one or more inlets, and feeding oxygen-containing gas stream into said fluid bed reactor through at least one further inlet provided that each of said streams fed to the reactor and the outlet gas mixture are outside their flammability limits, whereby levels of oxygen are employed higher than may be used in a fixed bed reactor, without danger of flammability, and co-joining the oxygen-containing gas, ethylene and acetic acid while in contact with said fluid bed catalyst material in said fluid bed reactor to enable the ethylene, acetic acid and oxygen to react to produce vinyl acetate and recovering said vinyl acetate from said fluid bed reactor.

Claim 28 (New). The process of claim 27 wherein the concentration of ethylene in the combined gaseous feeds entering the reactor is between 30 to 70 volume percent, the concentration of acetic acid in the combined gaseous feeds is between 10 to 25 volume percent, and the concentration of oxygen in the combined gaseous feeds is between 8 to 25 volume percent.